

R E M A R K S

Claims 1 to 11 as set forth in Appendix II of this paper are now pending in this case. Claims 1, 3, 10 and 11 have been amended as indicated in Appendix I.

Accordingly, the definition of R^2 in Claim 1 has been amended to more closely correlate to the exemplary representatives illustrated in Tables 1 to 3, pages 6 to 10, of the application. Claim 3 has been revised accordingly. Additionally, applicants have revised the wording of Claim 10 to refer to -phytopathogenic- fungi in accordance with the disclosure on page 11, indicated lines 16 to 22, of the application, instead of "harmful" fungi. Claim 11 has been revised to include the elected species. No new matter has been added.

The Examiner has rejected Claim 10 under 35 U.S.C. §112, ¶2, contending that the expression "harmful fungi" renders the claim indefinite because the term "harmful" is not defined in the specification of the claim. Applicants have replaced the term "harmful" by -phytopathogenic-. An explanation of the expression "phytopathogenic fungi" is provided in applicants' disclosure (ie. page 11, indicated lines 16 to 22, of the application). Favorable reconsideration of the Examiner's position and withdrawal of the respective rejection is therefore respectfully solicited.

The Examiner has rejected Claims 1 to 5 and 7 to 10 under 35 U.S.C. §112, ¶1, contending that those claims relate to subject matter which is not disclosed by applicants in such a manner as to enable a person of ordinary skill in the art to make and/or use the claimed invention.

More particularly, the Examiner takes the position that the guidance or working examples which are provided in the application is insufficient to allow a person of ordinary skill in the art to select

- the particular ingredients to be combined, and
- the specific amounts of the combined ingredients,

which are necessary to achieve a synergistic fungicidal effect without engaging in experimentation which goes beyond the amount of testing routinely conducted in the technical area. Essentially, the Examiner contends that the data provided by applicants fail to show a

synergistic increase in the fungicidal action because "for example, ..., on page 4 of ... [Dr. Ammermann's] declaration, the degree of the combination of Ia and IIa is 100 which merely shows less than additive effects, compared to the control for Ia and IIa." (emphasis original). In the referenced experiment

- the degree of control¹⁾ which is achieved with the compound designated (Ia) is 55%,
- the degree of control which is achieved with the compound designated (IIa) is 55%, and
- the degree of control which is observed when the compounds (Ia) and (IIa) are applied in combination is 100%.

It is firstly respectfully noted that a degree of control of 100% indicates a complete control of the fungi (ie. page 3, second para, of Dr. Ammermann's Declaration), and it is impossible to arrive at a degree of control which exceeds 100%²⁾. Further, the Examiner's underlying assertion that the combination of two compounds which each exhibit a degree of control of 50% (or more), would result in a combined efficacy of 100% (or even more) is technically unsound.

A fungicidal efficacy of 50% of a compound at a particular application rate indicates that the respective amount of the compound reduces the fungal infection by 50%, relative to an infection of 100% of an untreated control³⁾ (calculation in accordance with the formula of Abbott)⁴⁾. If a second compound is applied, the second compound can naturally only be effective against the prevailing fungal infection, ie. the 50% of the fungal infection which was not affected by the first compound. Where the second compound has an efficacy of 50%, the second compound will further reduce the fungal prevailing infection by 50%. Accordingly, the combination of two compounds each having an efficacy of 50% will result in a theoretical fungicidal efficacy of the combination of 75% provided, of course, that no antagonistic or

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- 1) The "degree of control" corresponds to the "efficacy" addressed in *Schwalge et al.* (US 5,972,941). The expressions are in the following used as synonymous.
 - 2) A theoretical approach which -more often than not- yields a result which is impossible in practice is generally considered to be seriously flawed and inappropriate.
 - 3) Note, for example, the calculation in accordance with Abbott's formula, page 15, indicated line 31 et seq., of the application.
 - 4) The Examiner will note that the prevailing fungal infection in the determination of the degree of fungal control in accordance with Abbott's formula is always 100%, so that the absolute percentage of the fungal attack has no impact on the efficacy of the compound at the particular application rate.

synergistic interaction occurs when the compounds are combined. The foregoing rationale is the basis for the calculation of Colby which is referenced in the application as well as in Dr. Ammermann's Declaration⁵), and which is a well accepted tool in the pertinent art to evaluate synergistic and antagonistic effects resulting from a combination of active ingredients⁶).

It is respectfully noted that the Examiner's approach in the evaluation of applicants' data will routinely result in impossible degrees of fungicidal action where the sum of the fungicidal efficacy of the ingredients which are combined in the mixture is $\geq 100\%$. The calculation in accordance with Colby's formula is by far less likely to yield impossible results, and is well established and accepted in the pertinent art. The Examiner's reasons for doubting the presence of a synergistic increase of the fungicidal effect upon combination of the active ingredients defined in applicants' claims are, therefore, not deemed to constitute "acceptable evidence or reasoning" which supports a rejection under Section 112, ¶1, as for example addressed by the CCPA in *In re Marzocchi* (439 F.2d 220, 169 USPQ 637 (CCPA 1971)):

... In any event, it is incumbent on the Patent Office, whenever a rejection on this basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure.

(*Id.* at 223-23, 169 USPQ at 369-70, footnote and citation omitted)⁷). Moreover, it is not apparent to applicants why a person of ordinary skill in the pertinent art would doubt the truth or accuracy of any statement made by applicants in the application. Correspondingly, it is not seen why it would require more than routine efforts on the part of a person of ordinary skill in the pertinent art to

- select one of the compounds (Ia) to (Ic) and one of the compounds

5) Equally, col. 4, indicated line 62, to col. 5, indicated line 17, of *Schwalge et al.*

6) Note, for example, *Schwalge et al.*; or the respective remarks in *In re Kollman*, 595 F.2d 48, 201 USPQ 193 (CCPA 1979).

7) Note also: *In re Dinh-Nguyen*, 492 F.2d 856, 858, 181 USPQ 47, 49 (CCPA 1974); *In re Bowen*, 492 F.2d 859, 862, 181 USPQ 49, 51 (CCPA 1974); *In re Armbruster*, 512 F.2d 676, 185 USPQ 152 (CCPA 1975).

of formula (II) based on applicants' disclosure on pages 1 to 10, and

- combine the selected compounds in appropriate amounts in accordance with the guidance provided by applicants on page 11, indicated lines 5 to 8, and on page 12, indicated lines 10 to 25, of the application,

to achieve a synergistic fungicidal effect, notwithstanding the fact that synergistic or super-additive effects cannot be predicted merely by studying active ingredients separately. In light of the foregoing it is respectfully requested that the Examiner favorably reconsider his position. Withdrawal of the rejection under Section 112, ¶1, is solicited.

The Examiner has further rejected Claims 1 to 5 and 7 to 10 under 35 U.S.C. §103(a) as relating to subject matter which was *prima facie* obvious from the teaching of *Schwalge et al.* (WO 97/06681 and the corresponding US 5,972,941) and *Kasahara et al.* (US 5,847,005). Essentially, the Examiner contends that it would have been *prima facie* obvious for a person of ordinary skill in the art to combine

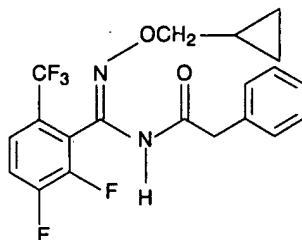
- one of the fungicidal "morpholine" compounds which are utilized in *Schwalge et al.*'s compositions, and
- one of the fungicidal benzamidoxime derivatives disclosed by *Kasahara et al.*

with the expectation that the resulting composition is useful as a fungicide. However, the combination which is referred to by the Examiner, ie. a composition of the respective compounds which exhibits no more than the additive effect of the ingredients, clearly does not meet the requirement that the components are present in synergistically effective amounts, and such a composition is not within the subject matter of applicants' invention as claimed. In accordance with the features set forth in Claim 1 it is not only required that the respective fungicidal compounds which constitute components (a) and (b) of applicants' composition are present. It is also required that the components (a) and (b) are present in synergistically effective amounts. As pointed out by the Examiner in the context of the rejection under Section 112, ¶1, a synergistic or super-additive effect is, in general, unpredictable, and a person of ordinary skill in the art could not expect to arrive at combinations which exhibits a

synergistically enhanced fungicidal effect. Accordingly, a person of ordinary skill could not have arrived at the subject matter defined in applicants' claims from the disclosure of *Schwalge et al.* and *Kasahara et al.* Favorable reconsideration of the Examiner's position and withdrawal of the respective rejection is, therefore, respectfully solicited.

The Examiner has withdrawn Claims 6 and 11 from further consideration in this application contending that those claims relate to a non-elected invention and that no allowable generic or linking claim is present in the application.

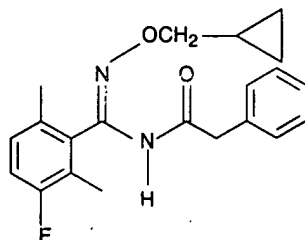
It is respectfully submitted that Claim 6 as well as Claim 11 in the wording herewith presented are generic to the elected species. The elected composition comprises, as the compound represented by formula (II) the compound of formula



(ie. Example II.79). Claims 6 is drawn to compositions wherein, in formula (II), either one of X^2 (one of the meta positions, relative to the oxime substituent, of the phenyl ring on the left hand side of formula (II)) and X^3 (the para positions, relative to the oxime substituent, of the phenyl ring on the left hand side of formula (II)) is hydrogen or halogen. The respective structural requirement is met by applicants' compound of Example II.79, and Claim 6 therefore cannot be regarded as being drawn to a non-elected invention.

In the group of compounds (II) which is specified in Claim 11 as herewith presented the phenyl ring on the left hand side of the formula carries hydrogen in the positions marked by X^3 (the para positions, relative to the oxime substituent, of the phenyl ring on the left hand side of formula (II)) and X^4 (one of the meta positions, relative to the oxime substituent, of the phenyl ring on the left hand side of formula (II)) and X^3 (the para positions, relative to the oxime substituent, of the phenyl ring on the left hand side of formula (II)) and a fluoro substituent in 5-position (ie. the second meta position, relative to the oxime substituent, of the phenyl ring on the left hand side of formula (II)). The two ortho-positions

of the respective phenyl ring are substituted in accordance with the definition for X¹ and X⁵ set forth in Claim 1. The group of compounds (II) which is specified in Claim 11 therefore corresponds to the formula



which also encompasses applicants' compound of Example II.79. Claim 11 therefore relates to the elected species.

In light of the foregoing, it is respectfully requested that Claims 6 and 11 be grouped and considered together with Claims 1 to 5 and 7 to 10.

Additionally, as is apparent from applicants remarks at the outset, applicants do not share the Examiner's position that no generic or linking claim is allowable. It is also respectfully noted that the "allowability" of a generic or linking claim is of no immediate concern in a restriction of the present case since the restriction of applicants' claims is governed by the principles of unity of invention in accordance with PCT Rule 13. The question pursuant to PCT Rule 13.2 is therefore whether the claimed inventions (or, as here, *compositions and methods of using the compositions*) have a technical relationship "involving one or more of the same or corresponding special technical features", wherein the special technical features of each of the claimed invention are "*those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art*". The Examiner will note that Rule 13.2 does not require that the one or more of the same or corresponding special technical features which are involved in the technical relationship define the contribution over the prior art. The Examiner will also note that "allowability" of the claimed subject matter is not limited to a consideration of technical features which define a contribution over the prior art. A finding that no generic or linking claim is "allowable" therefore does not mean that the claimed subject matter lacks unity of invention, and a restriction of a PCT application in the international or the national stage is improper unless unity of invention is lacking (PCT Article 27(1)). Favorable action is respectfully solicited.

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Respectfully submitted,

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Encl.: THE CHANGES IN THE CLAIMS (Appendix I)
THE AMENDED CLAIMS (Appendix II)

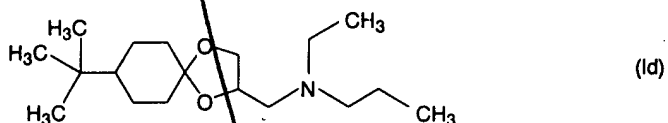
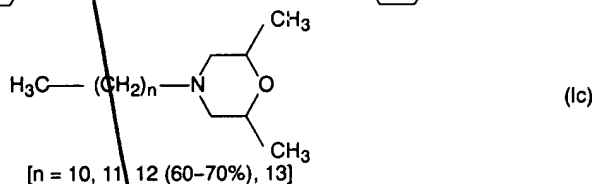
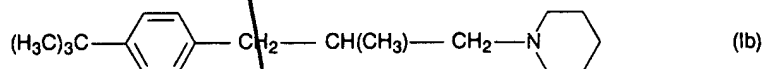
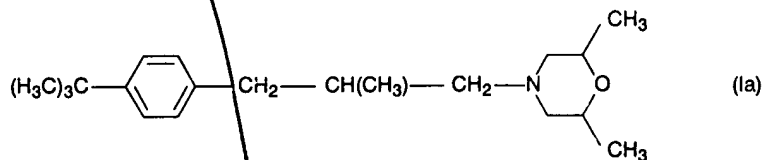
HBK/BAS

APPENDIX II:

THE AMENDED CLAIMS (clean copy):

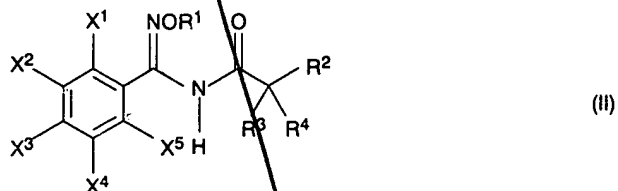
1. (amended) A fungicidal mixture, comprising as active components

a) a morpholine or piperidine derivative I selected from the group of the compounds Ia, Ib, Ic and Id



and

b) compounds of the formula II



where the substituents X^1 to X^5 and R^1 to R^4 are as defined below:

X^1 is C_1 - C_4 -haloalkyl, C_1 - C_4 -haloalkoxy or halogen;

X^2 to X^5 are, independently of one another, hydrogen, halogen, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy,

R^1 is C_1 - C_4 -alkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -alkynyl, C_1 - C_4 -alkyl- C_3 - C_7 -cycloalkyl, where these radicals may carry substituents selected from the group consisting of halogen, cyano and C_1 - C_4 -alkoxy,

R^2 is a phenyl radical which may have one to three substituents selected from the group consisting of halogen,

C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-alkoxy-C₂-C₄-alkenyl, C₁-C₄-alkoxy-C₂-C₄-alkynyl,

Sub D¹ contd.
R³ and R⁴ are, independently of one another, hydrogen, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, N-C₁-C₄-alkylamino, C₁-C₄-haloalkyl or C₁-C₄-haloalkoxy

in a synergistically effective amount.

2. A fungicidal mixture as defined in claim 1, where in the compounds II, R¹ is C₁-C₄-alkyl or C₁-C₄-alkylene-C₃-C₇-cycloalkyl.

C²
3. A fungicidal mixture as defined in claim 1, where in the compounds II, R² is phenyl which may be substituted by halogen, C₁-C₄-alkoxy or C₁-C₄-alkyl.

4. A fungicidal mixture as defined in claim 1, where in the compounds II, R³ or R⁴ are hydrogen, fluorine, chlorine, methyl, ethyl, methoxy, thiomethyl or N-methylamino.

5. A fungicidal mixture as defined in claim 1, where in the compounds II, X¹ is halo-C₁-C₆-alkyl, halo-C₁-C₆-alkoxy or halogen.

6. A fungicidal mixture as defined in claim 1, where in the compounds II, X² or X³ are hydrogen or halogen.

7. A fungicidal mixture as defined in claim 1, where in the compounds II, X⁴ is hydrogen, chlorine, fluorine, methoxy, ethoxy, trifluoromethyl or trifluoromethoxy.

8. A fungicidal mixture as defined in claim 1, where in the compounds II, X⁵ is hydrogen, chlorine, fluorine, methoxy, ethoxy, trifluoromethyl or trifluoromethoxy.

Sub D²
9. A fungicidal mixture as defined in claim 1, which is conditioned in two parts, where one part comprises one or more compounds I in a solid or liquid carrier and the other part comprises one or more compounds of the formula II in a solid or liquid carrier.

C³
10. (twice amended) A method for controlling phytopathogenic fungi, which comprises treating the fungi, their habitat or materials, plants, seeds, soils, areas or spaces to be protected against fungal attack with an effective amount of the fungicidal mixture as defined in claim 1, where the compounds I and one or more compounds of the formulae II can be applied simultaneously, that is either together or separately, or successively.

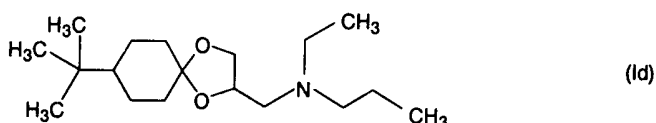
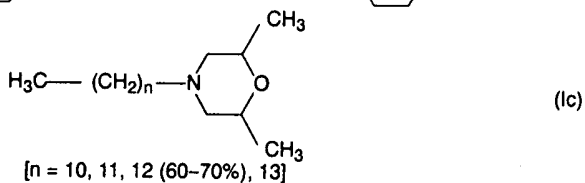
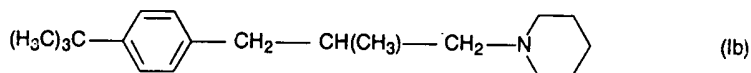
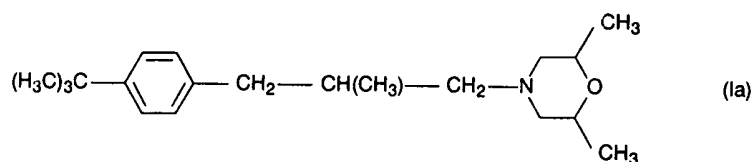
- C3 11. (amended) A fungicidal mixture as defined in claim 1, wherein in the compound of the formula II, R^1 is methylenecyclopropyl, X^2 is 5-F, X^3 and X^4 are each H, R^2 is $C_6H_5-CH_2$ and R^3 and R^4 are each H.
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A P P E N D I X I:

THE CHANGES IN THE CLAIMS (version with markings):

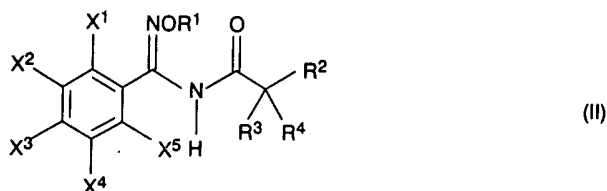
1. (amended) A fungicidal mixture, comprising as active components

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and

b) compounds of the formula II



where the substituents X^1 to X^5 and R^1 to R^4 are as defined below:

X^1 is C_1 - C_4 -haloalkyl, C_1 - C_4 -haloalkoxy or halogen;

X^2 to X^5 are, independently of one another, hydrogen, halogen, C_1 - C_4 -alkyl, C_1 - C_4 -haloalkyl, C_1 - C_4 -alkoxy or C_1 - C_4 -haloalkoxy,

R^1 is C_1 - C_4 -alkyl, C_2 - C_6 -alkenyl, C_2 - C_6 -alkynyl, C_1 - C_4 -alkyl- C_3 - C_7 -cycloalkyl, where these radicals may carry substituents selected from the group consisting of halogen, cyano and C_1 - C_4 -alkoxy,

R^2 is a phenyl radical [~~or a 5- or 6 membered saturated or unsaturated heterocyclyl radical having at least one heteroatom~~]

~~selected from the group consisting of N, O and S, where the cyclic radicals]~~ which may have one to three substituents selected from the group consisting of halogen, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-haloalkyl, C₁-C₄-haloalkoxy, C₁-C₄-alkoxy-C₂-C₄-alkenyl, C₁-C₄-alkoxy-C₂-C₄-alkynyl,

R³ and R⁴ are, independently of one another, hydrogen, C₁-C₄-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkylthio, N-C₁-C₄-alkylamino, C₁-C₄-haloalkyl or C₁-C₄-haloalkoxy

in a synergistically effective amount.

3. (twice amended) A fungicidal mixture as defined in claim 1, where in the compounds II, R² is phenyl[~~, thienyl, pyrazolyl, pyrrolyl, imidazolyl, thiazolyl, furyl, pyridazinyl or pyrimidinyl, and these radicals]~~ which may be substituted by halogen, C₁-C₄-alkoxy or C₁-C₄-alkyl.
10. (twice amended) A method for controlling [~~harmful~~] phytopathogenic fungi, which comprises treating the fungi, their habitat or [the] materials, plants, seeds, soils, areas or spaces to be protected against fungal attack with an effective amount of the [a] fungicidal mixture as defined in claim 1, where the compounds I and one or more compounds of the formulae II can be applied simultaneously, that is either together or separately, or successively.
11. (amended) A fungicidal mixture as defined in claim 1, wherein in the compound of the formula II, R¹ is methylenecyclopropyl, X² is 5-F, X³[~~r~~] and X⁴ [~~and X⁵~~] are each H, R² is C₆H₅-CH₂ and R³ and R⁴ are each H.